IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	: Prediman K. Shah *et al.*
Application No.	: 10/599,692
Filed	: October 5, 2006
For	: PREVENTION AND TREATMENT OF VASCULAR DISEASE WITH RECOMBINANT ADENO-ASSOCIATED VIRUS VECTORS ENCODING APOLIPOPROTEIN A-1 AND APOLIPOPROTEIN A-1 MILANO

Examiner	: Janet L. Epps Smith
Art Unit	: 1633
Docket No.	: 67789-101US0
Date	: December 31, 2009

DECLARATION OF PREDIMAN K. SHAH M.D. PURSUANT TO 37 CFR 1.131

I, Prediman K. Shah, declare and state as follows:

1. I am a joint inventor named in the above-referenced patent application.

2. The invention as described in the above-referenced patent application was conceived and reduced to practice by me and my co-inventors, Kamehameha Wong and Saswati Chatterjee.

3. The journal publication by Oka, *et al.*, "Cardiovascular Summary," ASGT News, Highlights of the 6th Annual AGST Meeting, Washington D.C., June 4-8, 2003, highlights various abstracts of the 2003 annual meeting of the American Society of Gene Therapy (ASGT), including results encompassed in an abstract described as "Patel, *et al.* (City of Hope National Medical Center, Duarte, CA). "

4. Patel, *et al.* (City of Hope National Medical Center, Duarte, CA) refers to the journal publication by Patel, *et al.* "rAAV-Mediated Apolipoprotein A-I Milano Gene Therapy for Atherosclerosis," Molecular Therapy Vol. 7, No. 5, May 2003 (The American Society of Gene Therapy), enclosed herein as Exhibit A.

5. My co-inventors and I completed conception of the invention as claimed in the above-referenced patent application by at least as early as the publication date of the Oka, *et al.* reference. This is further supported by the Patel, *et al.* reference, which is specifically cited in the Oka, *et al.* reference, published prior to that of Oka, *et al.*, and describes solely the work of Kamehameha Wong, Saswati Chatterjee, and myself.

6. Shortly before May 2003, my co-inventors and I tested the anti-atherogenic properties of both transplantation with ApoA-1 Milano transduced bone marrow cells as well as direct intramuscular vector injection, using rAAV-2 and rAAV-5 vectors encoding ApoA-1 Milano in homozygous transgenic ApoE -/- mice which develop large vessel atherosclerotic plaques when fed a high fat diet. The extent of atherosclerotic plaques was quantified approximately 20 weeks post treatment. These results are described in part by Patel, *et al.*

7. To generate further support for the long term inhibition of atherogenesis and efficacy of treatment, my co-inventors and I conducted additional studies between May 2003 and April 2004, using both direct intramuscular vector injection and transplantation with transduced bone marrow cells, resulting in significant reductions of plaque formation. The extent of atherosclerotic plaques were quantified approximately 20 to 24 weeks after injection, and 22 to 24 weeks after transplantation. These results are described in part in Examples 1 and 2 on pages 10-11 of U.S. Provisional Application No. 66/559,990.

8. From February 2004 to April 2004, my co-inventors and I worked with patent counsel. The invention was shortly thereafter constructively reduced to practice by the filing of U.S. Provisional Application No. 66/559,990 on April 6, 2004.

9. I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 10001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application and any patent issued thereon.

Dated: Dec 31, 2009

Prediman K. Shah, M.D.